

CLAIM AMENDMENTS

Please cancel claims 1 to 13, 27 and 30, and amend claims 14, 15, 17, 19 to 21, 24 to 26, 28, 29 and 31 as follows (pursuant to 37 CFR 1.121, a complete claim listing is provided below):

Claims 1 to 13. (Cancelled).

1 14. (Currently Amended) A mechanical bladder pump for collecting fluid
2 samples from a well, comprising:
3 an outer tubular member having a longitudinal bore;
4 an inner ~~tubular~~ member arranged within the bore of the outer tubular member for
5 oscillating longitudinal movement of the inner member relative to the outer member;
6 a bladder having a first end fixed relative ~~coupled~~ to a lower end of the inner
7 member and a second end fixed relative ~~coupled~~ to a lower end of the outer member, ~~one~~
8 ~~of the first and second ends of the bladder being in fluid communication with an inlet~~
9 ~~passage ; and the other of said first and second ends of said bladder being in fluid~~
10 ~~communication with an outlet passage;~~
11 a first check valve arranged in said inlet passage for allowing fluid to enter the
12 bladder through the inlet passage upon expansion of the bladder and preventing fluid
13 from exiting the bladder through the inlet passage upon compression of the bladder; ~~and~~
14 a second check valve arranged in said outlet passage for preventing fluid from
15 entering the bladder through the outlet passage upon expansion of the bladder and

16 allowing fluid to exit the bladder through the outlet passage upon compression of the
17 bladder; and
18 a return spring that stores energy during a tension stroke of the inner member in
19 an upward direction relative to the outer member and releases energy during a
20 compression stroke of the inner member in a downward direction relative to the outer
21 member.

1 15. (Currently Amended) The mechanical bladder pump according to claim 14,
2 wherein said inner member is tubular and ~~member~~ provides a means for transmitting
3 force for mechanically powering the bladder of the pump from a ~~the ground surface or~~
4 ~~other~~ point of operation above the well ~~of the pump to the bladder.~~

1 16. (Unchanged) The mechanical bladder pump according to claim 14, wherein
2 said outer tubular member provides a means for holding the pump in a desired position
3 within a well.

1 17. (Currently Amended) The mechanical bladder pump according to claim 14,
2 wherein said inner member is tubular and is concentric with said ~~and~~ outer tubular
3 member ~~members are concentric.~~

1 18. (Unchanged) The mechanical bladder pump according to claim 14, wherein

2 said bladder has corrugations along its length and is arranged within the outer tubular
3 member for expansion and contraction in a longitudinal direction.

1 19. (Currently Amended) The mechanical bladder pump according to claim 14,
2 wherein each of said check valves comprises a check ball, a valve seat facing a lower
3 side on one side of the check ball, and a projection facing an upper on the other side of
4 the check ball.

1 20. (Currently Amended) The mechanical bladder pump according to claim 14,
2 wherein said second end of the bladder is a lower end of the bladder and is fixed relative
3 to coupled to the lower end of the outer tubular member by a lower bladder adapter, said
4 lower bladder adapter having a projection on its lower end that prevents a check ball of
5 the first check valve from seating to close against the lower bladder adapter.

1 21. (Currently Amended) A mechanical bladder pump for collecting fluid
2 samples from a well, comprising:
3 an outer tubular member having a longitudinal bore;
4 an inner tubular member arranged within the bore of the outer tubular member for
5 oscillating longitudinal movement of the inner member relative to the outer member;
6 a bladder having a first end fixed relative to a lower end of the inner member and
7 a second end fixed relative to a lower end of the outer member, one of the first and

8 second ends of the bladder being in fluid communication with an inlet passage, and the
9 other of said first and second ends of said bladder being in fluid communication with an
10 outlet passage;

11 a first check valve arranged in said inlet passage for allowing fluid to enter the
12 bladder through the inlet passage upon expansion of the bladder and preventing fluid
13 from exiting the bladder through the inlet passage upon compression of the bladder;

14 a second check valve arranged in said outlet passage for preventing fluid from
15 entering the bladder through the outlet passage upon expansion of the bladder and
16 allowing fluid to exit the bladder through the outlet passage upon compression of the
17 bladder; and

18 ~~The mechanical bladder pump according to claim 14, further comprising a return~~
19 spring that stores energy during a tension stroke of the inner tubular member and releases
20 energy during a compression stroke of the inner tubular member, said spring being
21 arranged to bias the inner tubular member in a downward direction relative to the outer
22 tubular member.

1 22. (Unchanged) The mechanical bladder pump according to claim 21, further
2 comprising a spring retainer secured within the bore of the outer tubular member, said
3 spring retainer having a circular lip on a lower end thereof for retaining the spring in a
4 concentric position relative to the inner tubular member.

1 23. (Unchanged) The mechanical bladder pump according to claim 21, further
2 comprising a spring retainer secured within the bore of the outer tubular member, said
3 spring retainer providing a vertical stop against which an upper end of the spring rests
4 during operation of the pump.

1 24. (Currently Amended) The mechanical bladder pump according to claim 21,
1 wherein said first end of the bladder is an upper end of the bladder and is fixed relative
2 ~~coupled~~ to the lower end of the inner tubular member by an upper bladder adapter and a
3 check ball retainer of said second check valve, and wherein a surface on an upper end of
4 the check ball retainer ~~upper bladder adapter~~ provides a seat for a lower end of the spring.

1 25. (Currently Amended) The mechanical bladder pump according to claim 14,
2 wherein said first end of the bladder is an upper end of the bladder and is fixed relative
3 ~~coupled~~ to the lower end of the inner tubular member by an upper bladder adapter and a
4 check ball retainer of said second check valve, wherein said ~~second check valve~~
5 ~~comprises a check ball retainer~~ is attached to said upper bladder adapter, and wherein
6 said check ball retainer has a projection on a lower surface thereof which prevents a
7 check ball from closing said second passage upon compression of the bladder.

1 26. (Currently Amended) The mechanical bladder pump according to claim 14,
2 wherein said first end of the bladder is an upper end of the bladder and is fixed relative

3 ~~coupled~~ to the lower end of the inner tubular member by an upper bladder adapter which
4 functions as a movable piston to compress and expand the bladder during operation of the
5 pump.

Claim 27. (Cancelled).

1 28. (Currently Amended) The mechanical bladder pump ~~fluid pumping device~~
2 according to claim ~~14~~ 27, wherein at least a portion of said inner member is flexible.

1 29. (Currently Amended) The mechanical bladder pump ~~fluid pumping device~~
2 according to claim ~~14~~ 27, wherein at least a portion of said inner member is made of a
3 polymeric material.

Claim 30. (Cancelled).

1 31. (Currently Amended) A method of collecting a fluid sample from a well,
2 comprising the steps of:
3 providing a pumping device having an inner member and an outer member which
4 are arranged together for oscillating movement relative to each other in a longitudinal
5 direction, and a pump mechanism comprising a bladder having a first end fixed relative
6 to the inner member and a second end fixed relative to the outer member;

7 placing the pumping device in a well; and
8 oscillating the inner member relative to the outer member to mechanically power
9 the pump mechanism to pump a fluid sample to an outlet of the pumping device;

10 ~~The method of collecting a fluid sample according to claim 30,~~ wherein said
11 oscillating step comprises a tension stroke in which said inner member is pulled upward
12 relative to said outer member to expand the bladder, and a compression stroke in which
13 said inner member is moved downward relative to said outer member to contract the
14 bladder, and wherein said pumping device comprises a return spring that stores energy
15 during said tension stroke and releases energy during said compression stroke.